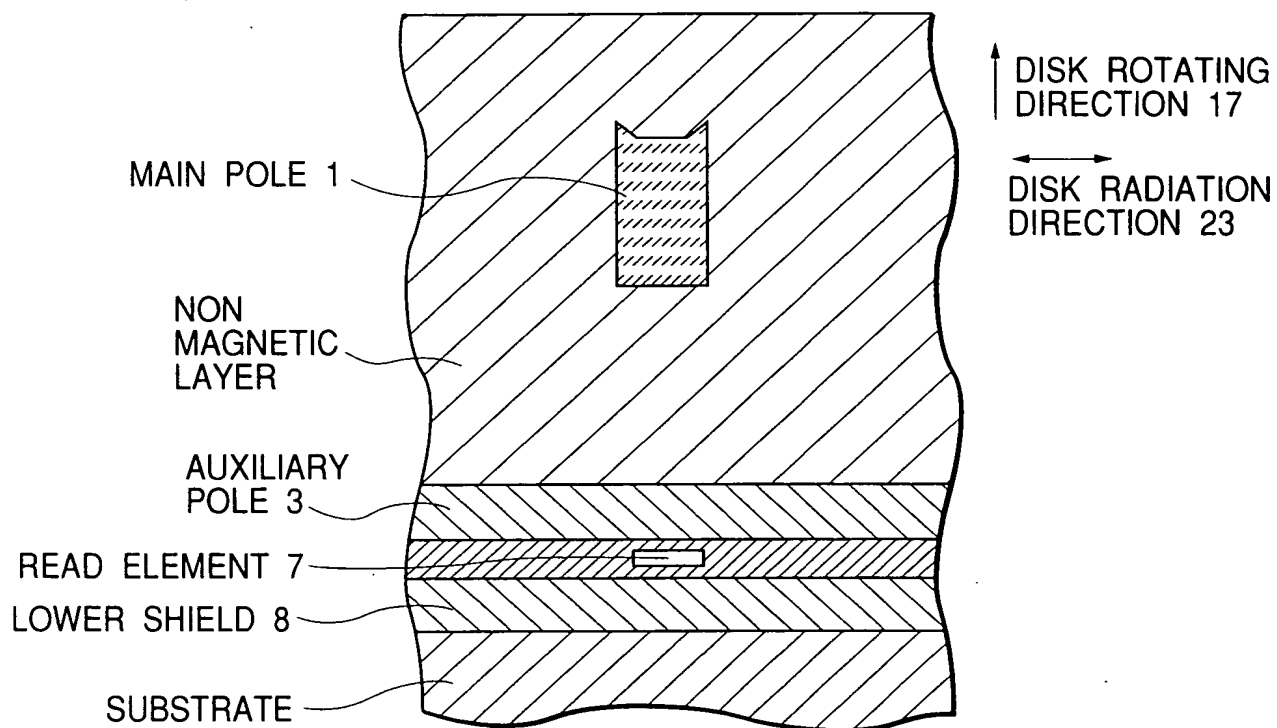
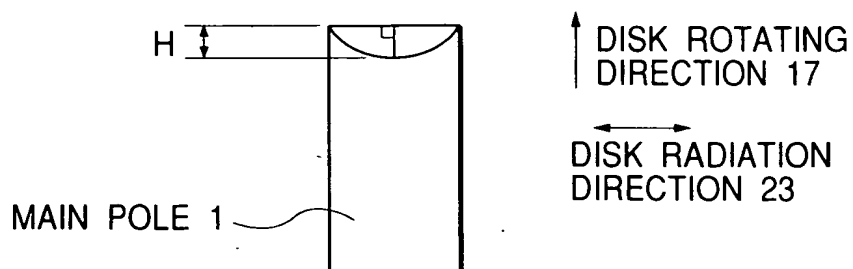
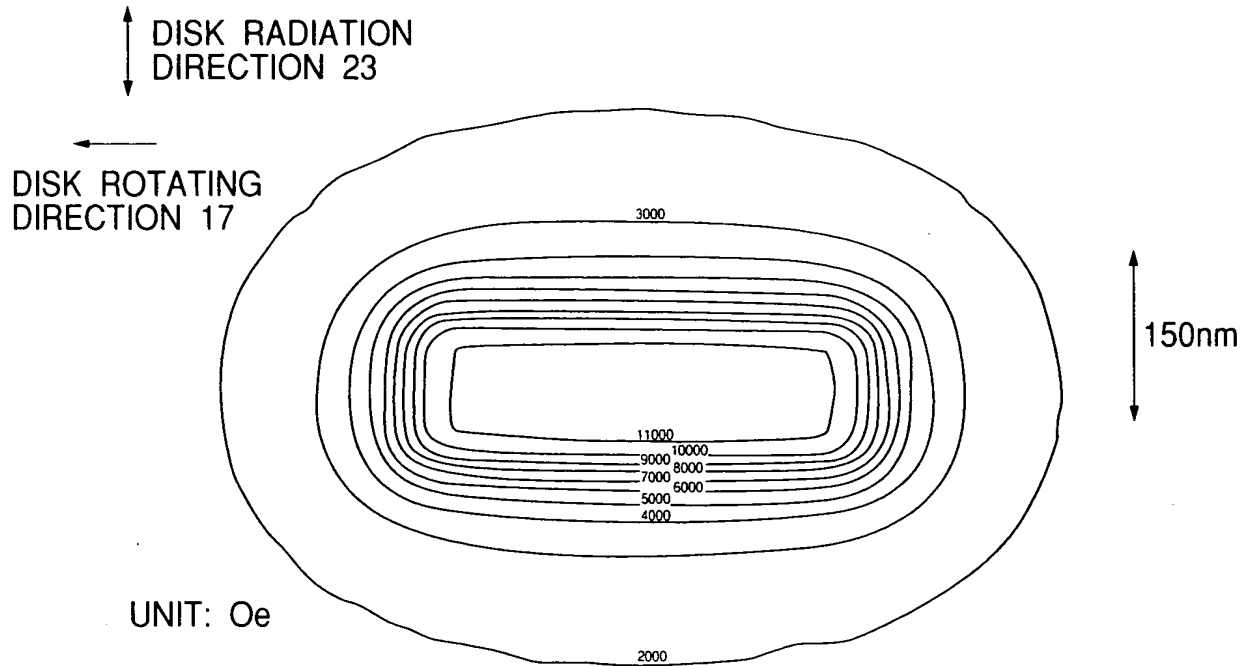


**FIG. 1(A)****FIG. 1(B)**

**FIG. 2(A)**

CONTOURS OF PERPENDICULAR COMPONENT OF WRITE  
FIELD GENERATED FROM A SINGLE POLE TYPE HEAD

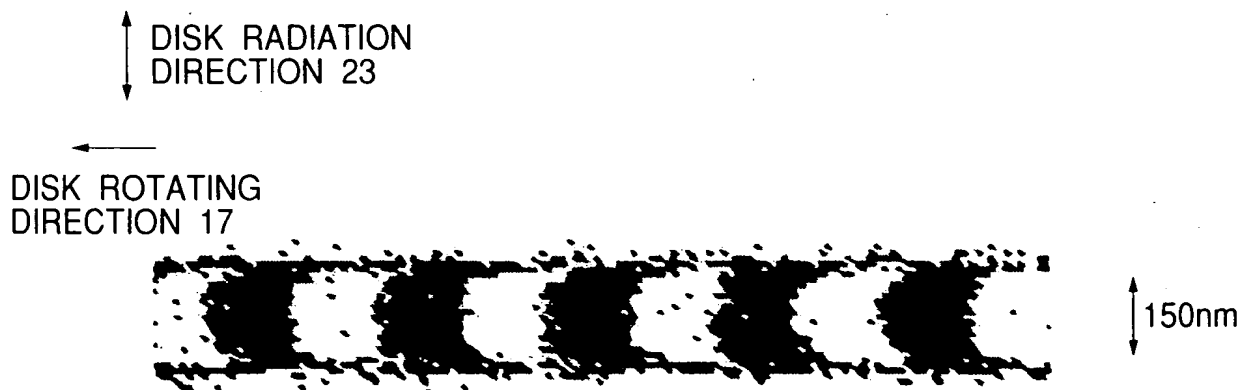
**FIG. 2(B)**

FIG. 3(A)

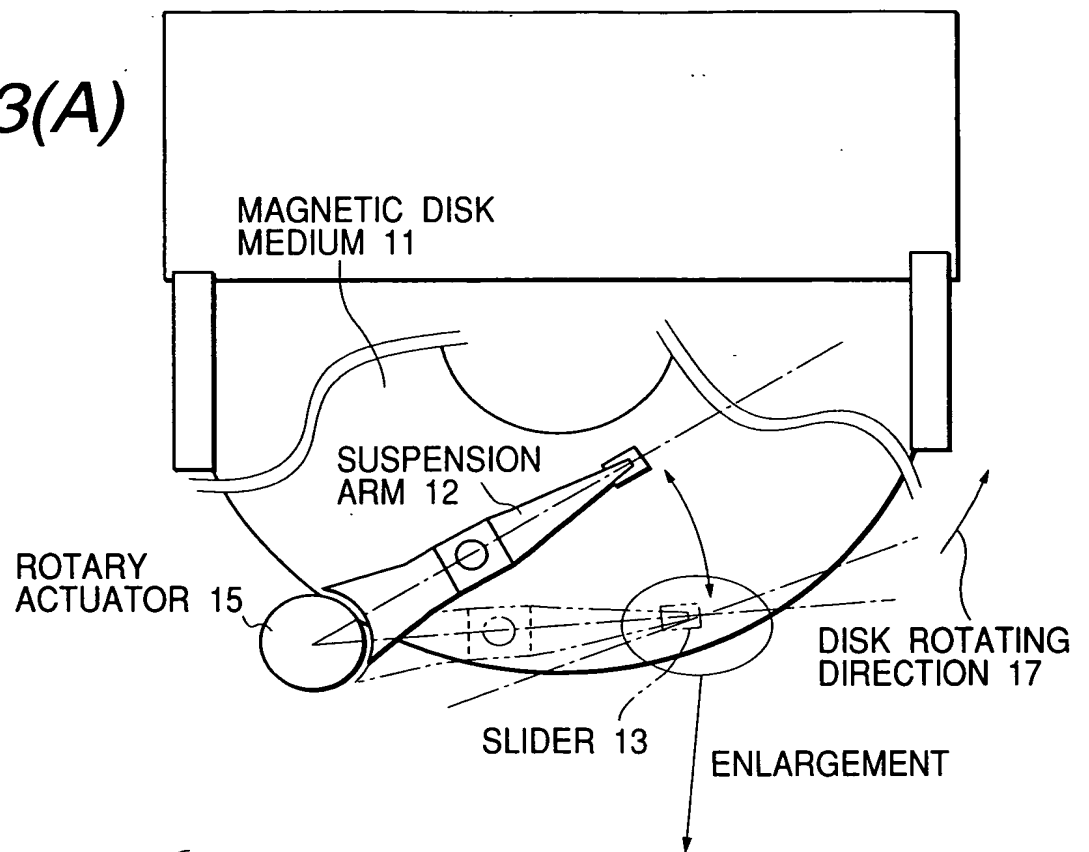


FIG. 3(B)

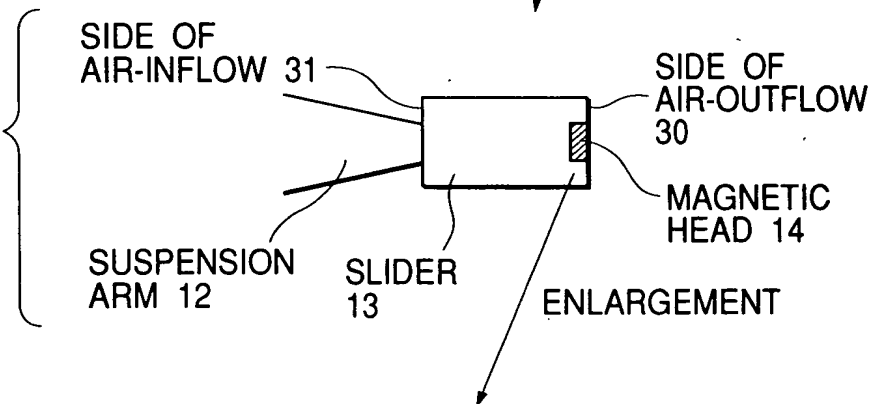
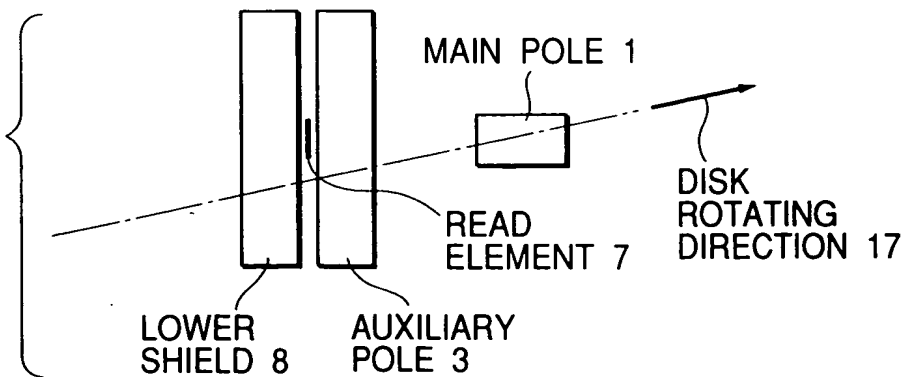
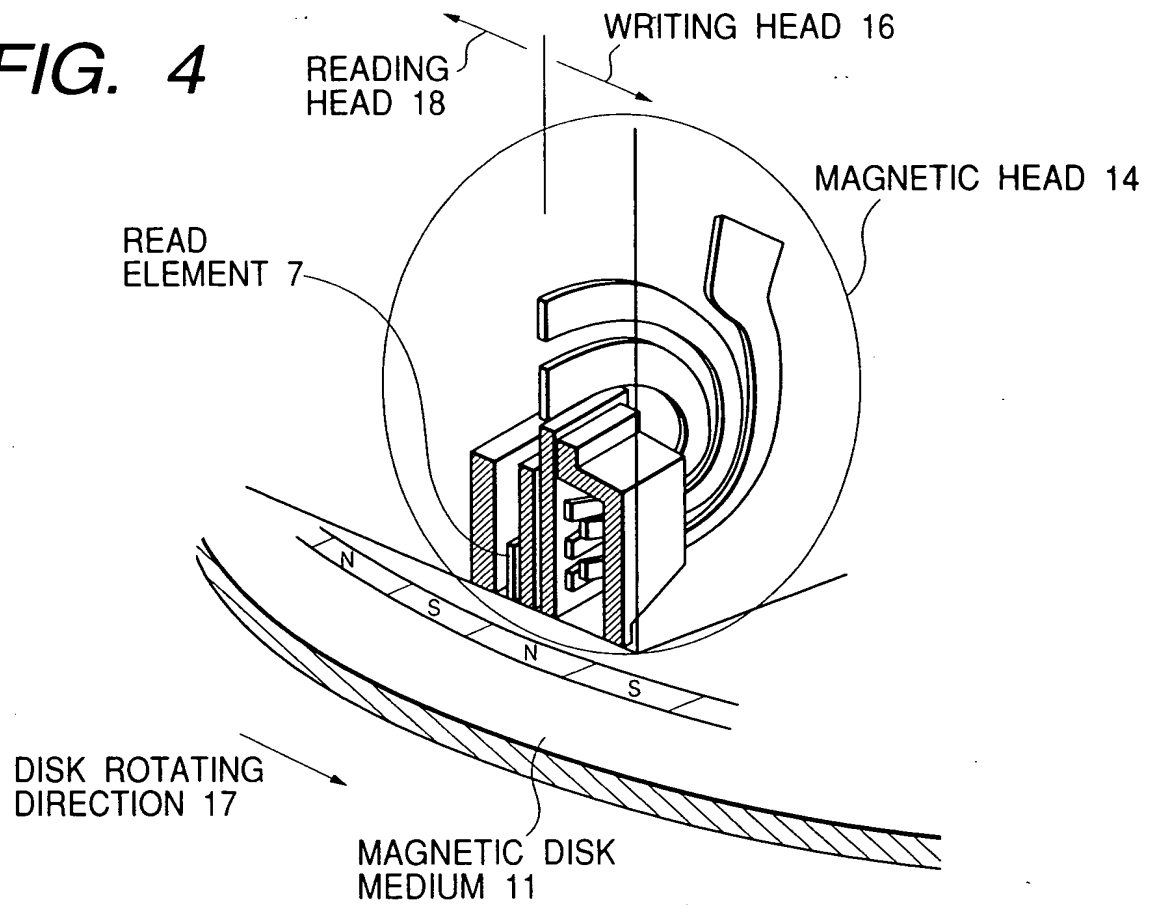
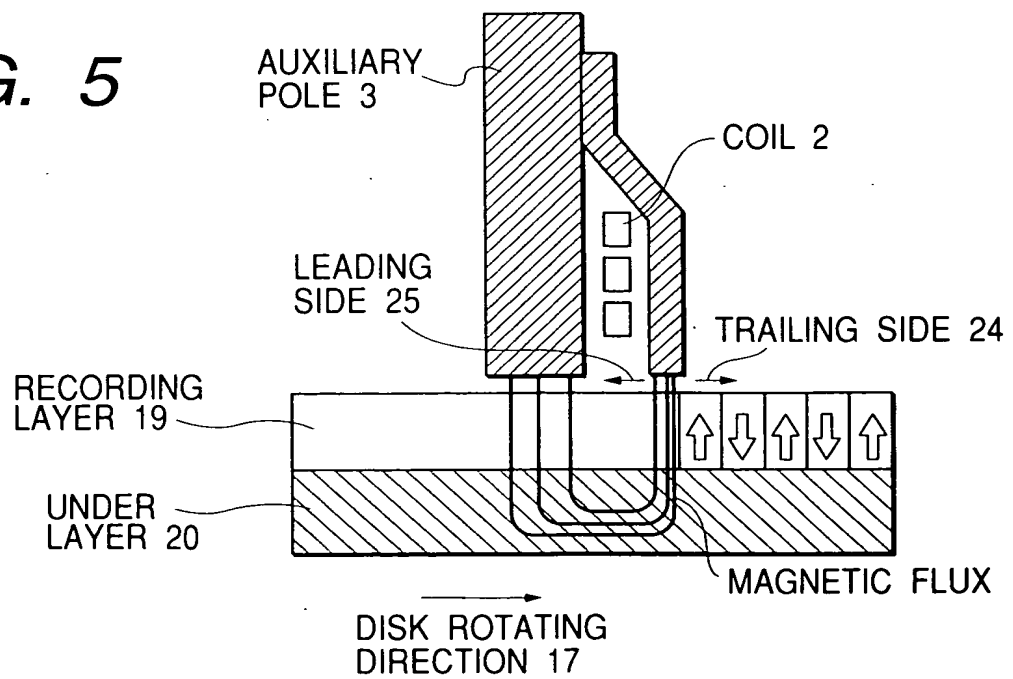
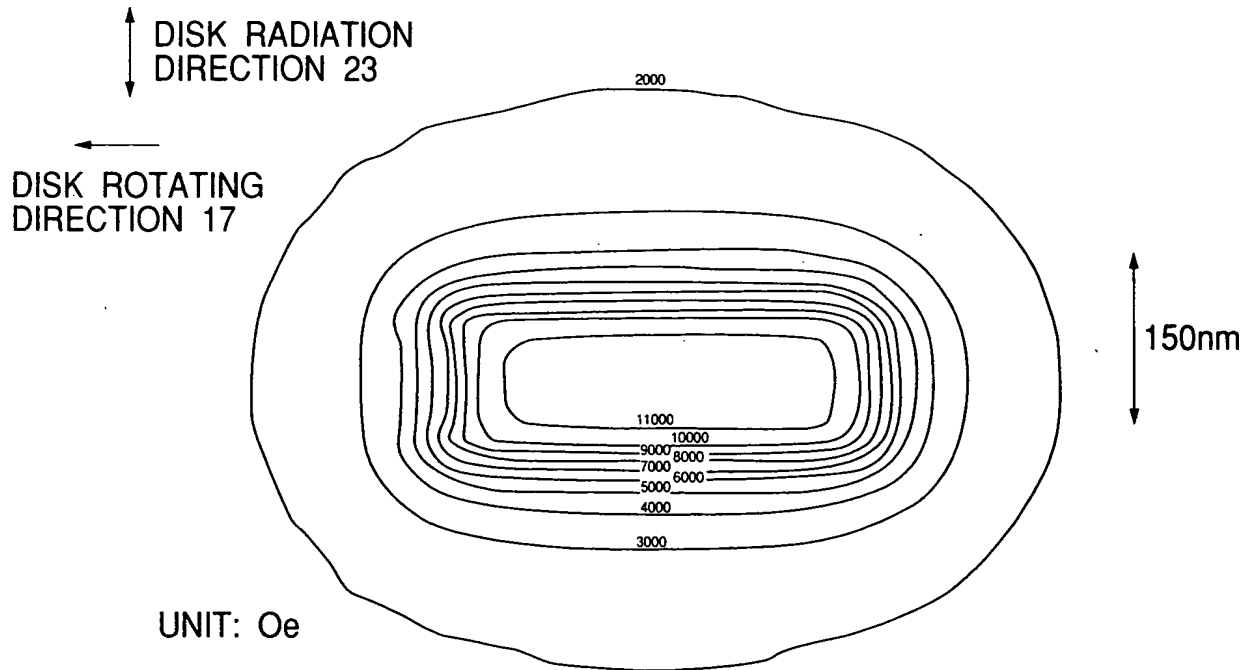


FIG. 3(C)



**FIG. 4****FIG. 5**

**FIG. 6(A)**

CONTOURS OF PERPENDICULAR COMPONENT OF WRITE  
FIELD GENERATED FROM A SINGLE POLE TYPE HEAD

**FIG. 6(B)**

**FIG. 7**DISK ROTATING  
DIRECTION 17  
←

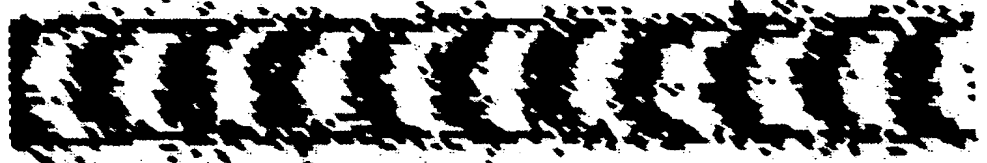
163kFCI

CONVENTIONAL  
STRUCTURE

THE INVENTION



326kFCI

CONVENTIONAL  
STRUCTURE

THE INVENTION



651kFCI

CONVENTIONAL  
STRUCTURE

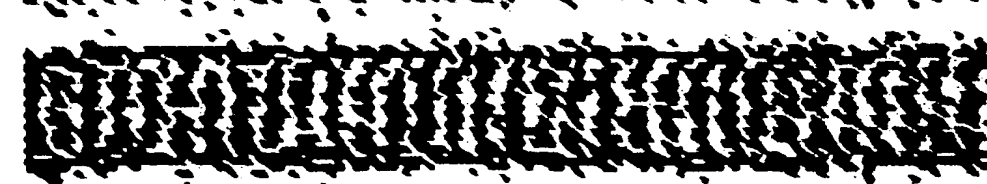
THE INVENTION



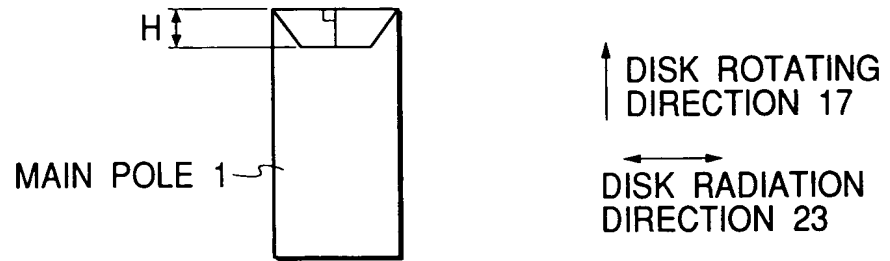
977kFCI

CONVENTIONAL  
STRUCTURE

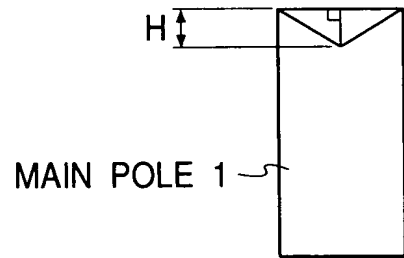
THE INVENTION



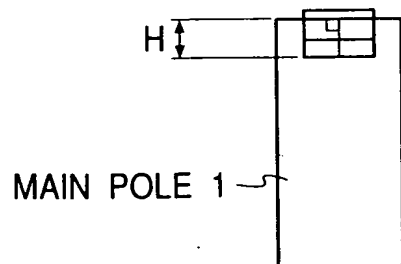
**FIG. 8(A)**

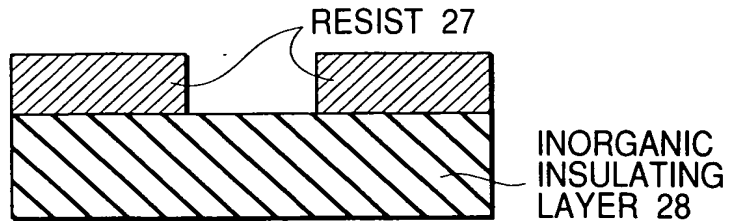
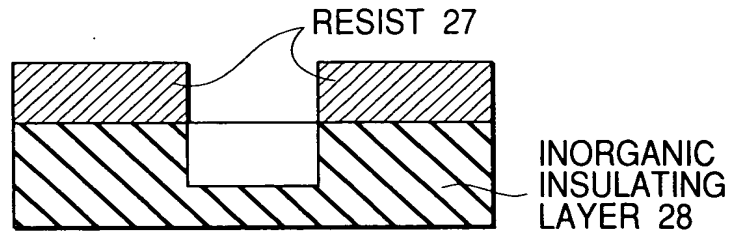
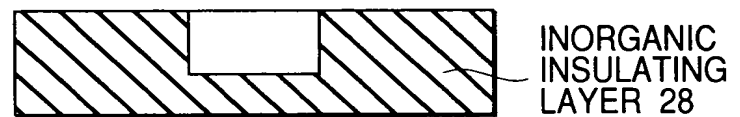
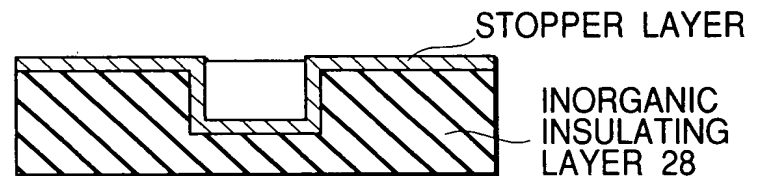
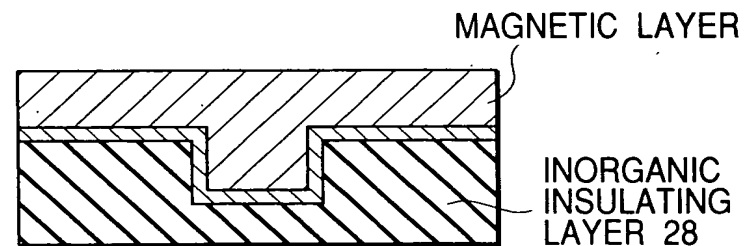
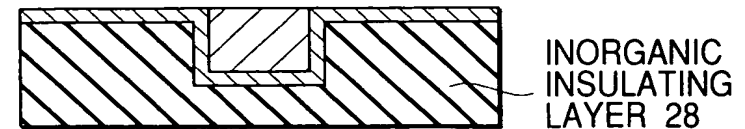
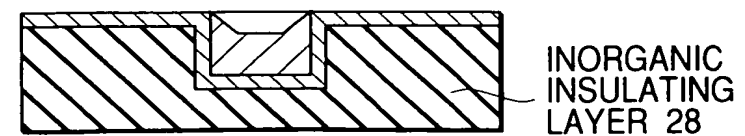


**FIG. 8(B)**

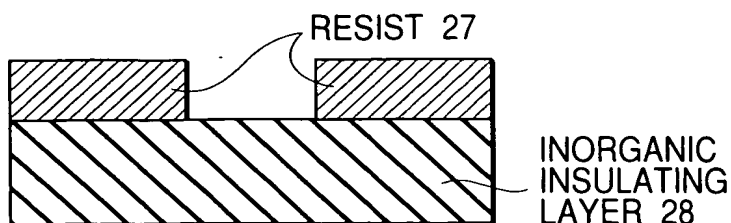
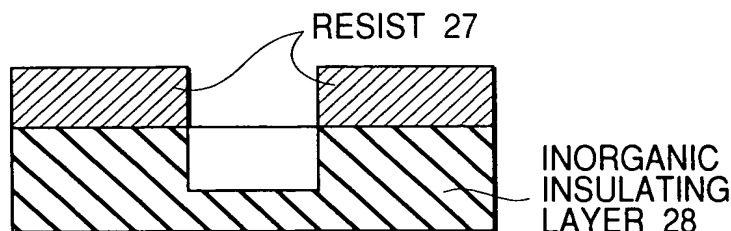
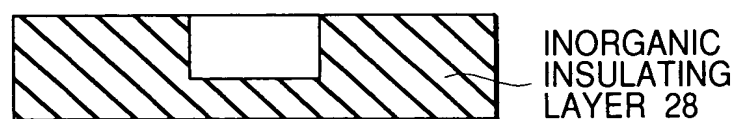
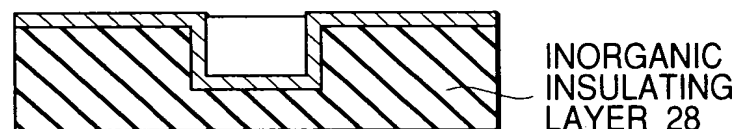
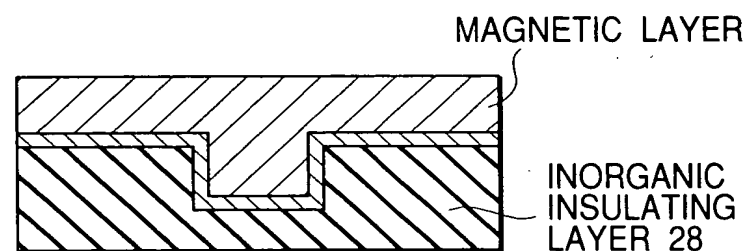
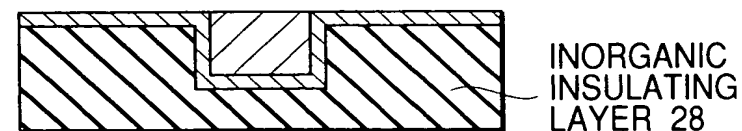
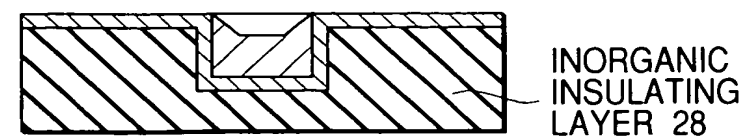


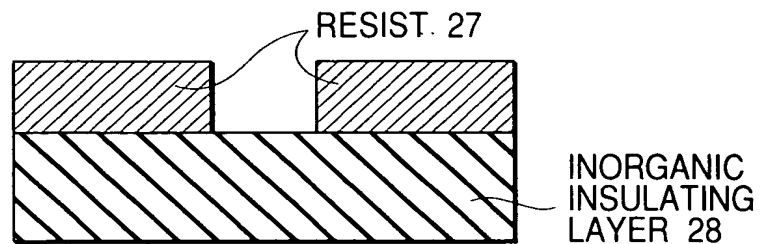
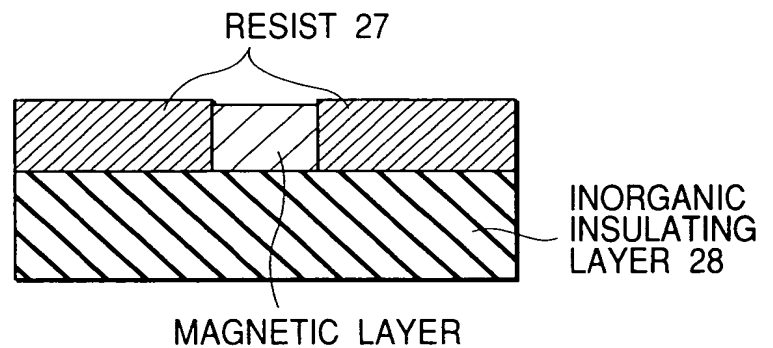
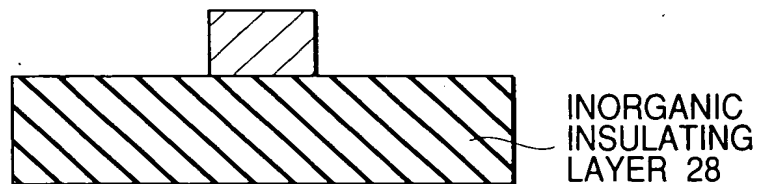
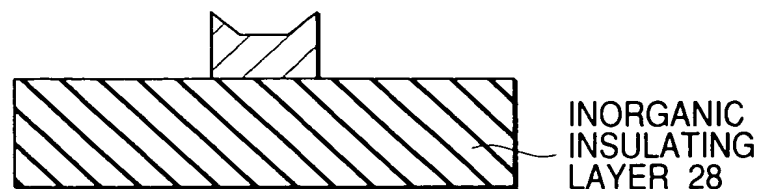
**FIG. 8(C)**



**FIG. 9(A)**FORMING A  
RESIST PATTERN**FIG. 9(B)**ETCHING THE  
INORGANIC INSULATING**FIG. 9(C)**REMOVING THE  
RESIST PATTERN**FIG. 9(D)**FORMING A  
STOPPER LAYER**FIG. 9(E)**FORMING A  
MAGNETIC LAYER**FIG. 9(F)**POLISHING TO FLATTEN  
THE MAGNETIC LAYER**FIG. 9(G)**FORMING A HOLLOW  
OF MAGNETIC LAYER

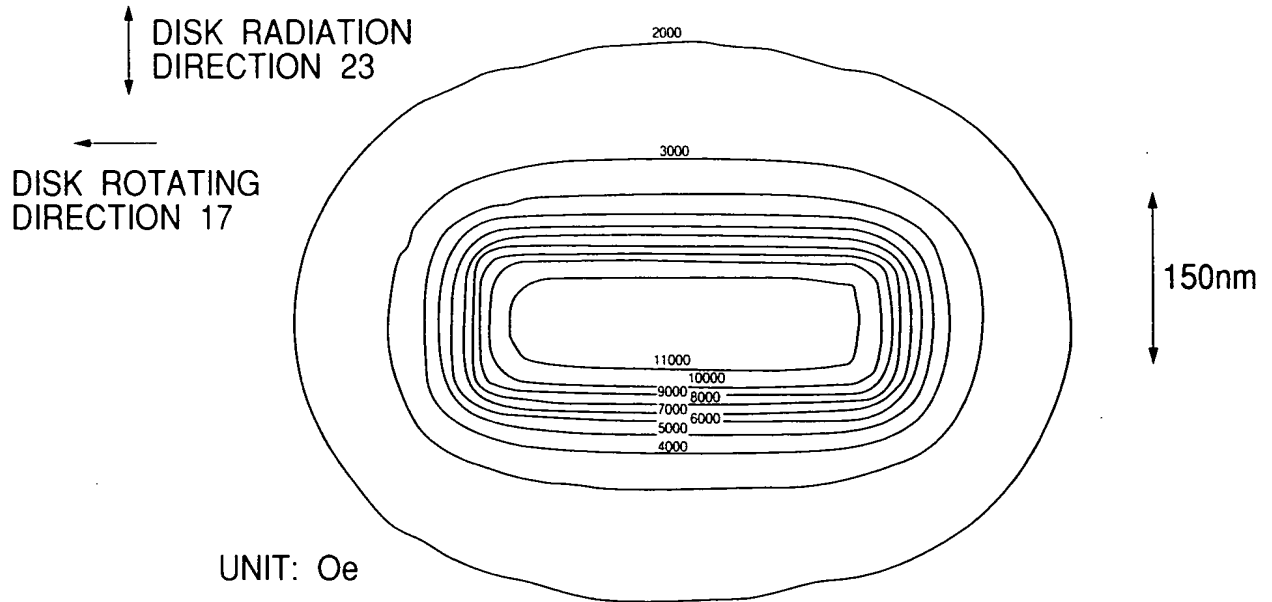


**FIG. 10(A)**FORMING A  
RESIST PATTERN**FIG. 10(B)**ETCHING AN INORGANIC  
INSULATING**FIG. 10(C)**REMOVING THE  
RESIST PATTERN**FIG. 10(D)**FORMING A  
STOPPER LAYER**FIG. 10(E)**FORMING A  
MAGNETIC LAYER**FIG. 10(F)**POLISHING TO FLATTEN  
THE MAGNETIC LAYER**FIG. 10(G)**FORMING A HOLLOW  
OF MAGNETIC LAYER

**FIG. 11(A)**FORMING A  
RESIST PATTERN**FIG. 11(B)**FORMING A  
MAGNETIC LAYER**FIG. 11(C)**REMOVING THE  
RESIST PATTERN**FIG. 11(D)**FORMING A HOLLOW  
OF MAGNETIC LAYER

# FIG. 12

IN CASE OF A SHALLOW HOLLOW ( $H=10\text{nm}$ )



CONTOURS OF PERPENDICULAR COMPONENT OF WRITE  
FIELD GENERATED FROM A SINGLE POLE TYPE HEAD

# FIG. 13

IN CASE OF A DEEP HOLLOW ( $H=200\text{nm}$ )

